**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

Claims 1-12 (cancelled)

Claim 13. (currently amended): A non-intrusive method for measuring loss rates and transfer durations for data in a telecommunication network in packet mode comprising the steps of:

performing measurement operations with a plurality of observing probes that are synchronized and distributed at different points in the network on data packets which are being transmitted through the network;

~~said performing step comprising dating and identifying the data packets;~~

~~transmitting measurement results from said dating and identifying step from said probes to a collecting module;~~

said ~~performing step further comprising~~ measuring operations comprising steps of dating and identifying the data packets, classifying the data packets in a homogeneous flow ~~and~~ , counting the data packets in the homogeneous flow, and transmitting measurement results from said ~~classifying and counting steps~~ measurement operations from said probes to ~~said~~ a collecting module through the network; and

performing with the collecting module ~~a correlation~~ correlations between all of said measurement results received from the probes including determining unidirectional transfer durations per flow or information flow group and ~~the~~ a loss rate for the data packets.

Claim 14. (currently amended): ~~A~~ The non-intrusive method according to claim ~~13~~ 15, further comprising said identifying step comprising calculating an identification signature on packet contents for each said data packet.

Claim 15. (currently amended): A non-intrusive method ~~according to claim 13, further comprising~~ for measuring loss rates and transfer durations for data in a telecommunication network in packet mode comprising the steps of:

performing measurement operations with a plurality of observing probes that are synchronized and distributed at different points in the network on data packets which are being transmitted through the network;

said ~~dating step~~ measurement operations comprising steps of subjecting each observed data packet to dating in accordance with an absolute time reference gained by the observing probes, identifying the data packets, classifying the data packets in a homogeneous flow, counting the data packets in the homogeneous flow, and transmitting measurement results from said measurement operations from said probes to a collecting module through the network; and

performing with the collecting module correlations between all of said measurement results received from the probes including determining unidirectional transfer durations per flow or information flow group and the loss rate for the data packets.

Claim 16. (currently amended): ~~A~~ The non-intrusive method according to claim 15, further comprising issuing one ticket comprising packet passage time, packet signature, and a value of a counter associated with the flow or the information flow group.

Claim 17. (currently amended): A non-intrusive method for measuring loss rates and transfer durations for data in a telecommunication network in packet mode comprising the steps of:

performing measurement operations with a plurality of observing probes that are synchronized and distributed at different points in the network on data packets which are being transmitted through the network;

~~said performing step comprising dating and identifying the data packets;~~

~~transmitting measurement results from said dating and identifying step from said probes to a collecting module;~~

said ~~performing step further comprising~~ measurement operations comprising steps of subjecting each data packet to dating in accordance with an absolute time reference gained by

the observing probes, identifying the data packets, classifying the data packets in a homogeneous flow ~~and~~ , counting the data packets in the homogeneous flow, and transmitting all measurement results from said ~~classifying and counting steps~~ measurement operations from said probes to ~~said~~ a collecting module through the network;

performing with the collecting module a correlation between all of said measurement results received from the probes including determining unidirectional transfer durations per flow or information flow group and the loss rate for the data packets;

performing a filtering step and a semi-static sampling step for classes obtained during the classifying step ~~and~~ , said sampling step comprising selecting those data packets which will cause ~~said one~~ a ticket to be issued.

Claim 18. (currently amended): ~~A~~ The non-intrusive method according to claim 17, further comprising a dynamic sampling step with a rate which depends on congestion conditions in the network.

Claim 19. (currently amended): ~~A~~ The non-intrusive method according to claim 17, wherein said sampling step is performed with a sampling rate which can be limited to a maximum value that is defined by an initial configuration or be modulated by the collecting module or by an external device operating the network.

Claim 20. (currently amended): ~~A~~ The non-intrusive method according to claim 18, wherein said sampling step is performed with a sampling rate which can be limited to a maximum value that is defined by an initial configuration or be modulated by the collecting module or by an external device operating the network.

Claim 21. (currently amended): ~~A~~ The non-intrusive method according to claim ~~13~~ 15, wherein said classifying step comprises classifying each said data packet according to recipient characteristics of the respective data packet or according to a contents ~~type for~~ of the respective data packet.

Claim 22. (currently amended): A non-intrusive method for measuring loss rates and transfer durations for data in a telecommunication network in packet mode comprising the steps of:

performing measurement operations with a plurality of observing probes that are synchronized and distributed at different points in the network on data packets which are being transmitted through the network;

~~said performing step comprising dating and identifying the data packets;~~

~~transmitting measurement results from said dating and identifying step from said probes to a collecting module;~~

said ~~performing step further comprising~~ measurement operations comprising steps of dating and identifying the data

packets, classifying the data packets in a homogeneous flow ~~and~~ , counting the data packets in the homogeneous flow, and transmitting measurement results from said ~~classifying and counting steps~~ measurement operations from said probes to ~~said~~ a collecting module through the network;

performing with the collecting module a correlation between all of said measurement results received from the probes including determining unidirectional transfer durations per flow or information flow group and the loss rate for the data packets;

wherein for a given flow ~~F~~, the transfer durations determining step is carried out as follows:

$$D_{es}(p) = Hs(p) - He(p)$$

where $D_{es}(p)$ is a transfer duration from an entry point (e) to an exit point (s) for a respective data packet (p); He(p) is a first time stamping in a ticket associated with the respective data packet (p) by one of said probes at the entry point; and Hs(p) is a second time stamping in the ticket associated with the respective data packet (p) by said one of said probes at the exit point.

Claim 23. (currently amended): ~~A~~ The non-intrusive method according to claim ~~13~~ 15, further comprising calculating the transfer durations at different sections in the network using a mapping operation of combinations which belong to one of said data packets that has been observed by several of said probes.

Claim 24. (currently amended): A non-intrusive method for measuring loss rates and transfer durations for data in a telecommunication network in packet mode comprising the steps of:

performing measurement operations with a plurality of observing probes that are synchronized and distributed at different points in the network on data packets which are being transmitted through the network;

~~said performing step comprising dating and identifying the data packets;~~

~~transmitting measurement results from said dating and identifying step from said probes to a collecting module;~~

said ~~performing step further comprising~~ measurement operations comprising steps of dating and identifying the data packets, classifying the data packets in a homogeneous flow ~~and~~ , counting the data packets in the homogeneous flow, and transmitting measurement results from said ~~classifying and counting steps~~ measurement operations from said probes to ~~said~~ a collecting module through the network;

performing with the collecting module a correlation between all of said measurement results received from the probes including determining unidirectional transfer durations per flow or information flow group and the loss rate for the data packets;

wherein, for a given flow, the loss rate determining step comprises calculating a number Pes(pq) of said data packets lost in the network between a passage of two data packets designated p and q according to the following formula:

$$Pes(pq) = Ne(pq) - Ns(pq)$$

where Ne(pq) = number of data packets between the passage of the packets p and q at an exit point; and Ns(pq) = number of packets between the passage of the packets p and q at an entry point.

Claim 25. (currently amended): ~~A~~ The non-intrusive method according to claim 19, wherein, in the case where the sampling rate is low, breaking down time in slots starting from an instant when an observed data packet causes one last ticket to be issued, fixing the size of each time slot locally at one of the probes or by the collecting module, associating one counter with each time slot, and, for every data packet passing by that does not cause one ticket to be issued, incrementing said one counter associated with a corresponding time slot when the passage occurred, and for the next packet passing by that causes one ticket to be issued, attaching a list of counters thereby obtained.

Claim 26. (currently amended): A system with a distributed architecture for measuring non-intrusively loss rates and transfer durations for data in a telecommunication network in a packet mode, said system comprising:

~~a plurality of flow observing probes arranged in several locations in the network;~~

~~means for transmitting measurements from said probes to a collecting module including means for analyzing said measurements;~~

~~each of said probes further comprising means~~ a plurality of flow observing probes arranged in several locations in the network for observing data packets which are being transmitted through the network, each of said probes comprising means for subjecting each of said observed data packets to dating, means for classifying said data packets in a homogeneous flow, means for identifying each said data packet, and means for counting the data packets in one flow;

~~said transmitting means using the network to transmit the measurements carried out by the probes to the collecting module; and~~

means for synchronizing said probes;

means for transmitting measurement results issued by said dating, identifying, classifying and counting means from said probes through said network to a collecting module ~~the collecting module~~ comprising means for correlating said measurement results comprising means for determining from said measurement results unidirectional transfer durations per flow or information flow group and the loss rate for the data packets.

Claim 27. (currently amended): ~~A~~ The system according to claim 26, wherein the identifying means of each said probe comprises

means for calculating an identification for each said data packet.

Claim 28. (currently amended): ~~A~~ The system according to claim 26, wherein each said probe further comprises means for compressing the measurements before transmitting said measurements to the collecting module.

Claim 29. (new): A system with a distributed architecture for measuring non-intrusively loss rates and transfer durations for data in a telecommunication network in a packet mode, said system comprising:

a plurality of flow observing probes arranged in several locations in the network for observing data packets which are being transmitted through the network, each of said probes comprising means for subjecting each observed data packet to dating in accordance with an absolute time reference gained by said observing probe, means for identifying each said data packet, means for classifying data packets in a homogeneous flow, and means for counting the data packets in one flow;

means for transmitting measurement results issued by said dating, identifying, classifying and counting means from said probes through said network to a collecting module comprising means for correlating said measurement results comprising means for determining from said measurement results unidirectional transfer durations per flow or information flow group and the loss rate for the data packets.

Claim 30. (new): The system according to claim 29, wherein each

of said probes further comprises means for calculating an identification signature on packet contents for each of said data packets in order to identify said data packets.

Claim 31. (new): The system according to claim 29, wherein each of said probes further comprises means for issuing a ticket comprising packet passage time, packet signature, and a value of a counter associated with the flow or the information flow group.

Claim 32. (new): The system according to claim 29, wherein each of said probes further comprises means for filtering said data packets and means for semi-static sampling classes issued by said classifying means, said sampling means comprising means for selecting those data packets which will cause a ticket to be issued.

Claim 33. (new): The system according to claim 29, wherein each of said probes further comprises means for dynamic sampling said data packets with a rate depending on congestion conditions in the network.

Claim 34. (new): The system according to claim 29, wherein said sampling means comprise means for performing said sampling with a sampling rate which can be limited to a maximum value that is defined by an initial configuration or be modulated by the collecting module or by an external device operating the network.

Claim 35. (new): The system according to claim 29, wherein said sampling means comprise means for performing said sampling with

a sampling rate which can be limited to a maximum value that is defined by an initial configuration or be modulated by the collecting module or by an external device operating the network.

Claim 36. (new): The system according to claim 29, wherein said classifying means comprise means for classifying each said data packet according to recipient characteristics of the respective data packet or according to a contents of the respective data packet.

Claim 37. (new): The system according to claim 29, wherein said transfer durations determining means comprise means for computing the transfer durations for a given flow F as follows:

$$D_{es}(p) = Hs(P) - He(p)$$

where $D_{es}(P)$ is a transfer duration from an entry point (e) to an exit point (s) for a respective data packet (P); He(p) is a first time stamping in a ticket associated with the respective data packet (P) by one of said probes at the entry point; and Hs(P) is a second time stamping in the ticket associated with the respective data packet (P) by said one of said probes at the exit point.

Claim 38. (new): The system according to claim 29, wherein said loss rate determining means comprise means for calculating a number Pes(pq) of said data packets lost in the network between a passage of two data packets designated p and q according to the following formula:

$$Pes(pq) = Ne(pq) - Ns(pq)$$

where Ne(pq) = number of data packets between the passage of the packets p and q at an exit point; and Ns(pq) = number of packets between the passage of the packets p and q at an entry point.